

STANDARD SPECIFICATIONS
For the Reference of Architects
ON THE USE AND
APPLICATION OF SHELLAC

As Approved by
THE AMERICAN BLEACHED SHELLAC
MANUFACTURERS ASSOCIATION

Compiled and Published by
THE SHELLAC INFORMATION BUREAU
70 Pine Street, New York

★ STANDARD SPECIFICATIONS ★
on the USE AND APPLICATION OF SHELLAC ★

THE SPECIFICATIONS on the proper use of shellac set down in these pages are based primarily on two sources: (1) Information obtained from qualified craftsmen all over the country regarding their traditional practices, and (2) A rigorous testing of this information by the laboratories of Barsky and Strauss, Inc., Consulting Chemists and Chemical Engineers, of New York.

Barsky and Strauss exposed a series of test panels to accelerated traffic wear under rigorous conditions at Brooklyn Polytechnic Institute, New York. Some of these test panels were finished with pure white shellac, applied with and without filler. Other panels were finished with well-known brands of varnishes, oleoresinous sealers, and so-called penetrating wax sealers. The panels were then laid as a floor under traffic conditions crowding weeks of ordinary wear into each day.

Two important results were shown: (1) The panels finished in pure shellac came through the test with less discoloration and scarring than any of the others. (2) The most durable of the shellac finishes were those employing three thin coats, applied without filler, and thinned with approved proprietary solvent (denatured alcohol, other than anti-freeze). Only less durable is the shellac finish which employs two coats, applied somewhat heavier, which makes a highly satisfactory wearing surface.

A report on these tests and their conduct, in the form of a study written by Dr. Frank A. Strauss, will be made available to any architect who will address a request for a copy to the Shellac Information Bureau, 70 Pine Street, New York. Some of the panels which formed the basis of the test are now on display at the Architects Samples Corporation, 101 Park Avenue, New York.

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General Specifications on the Use and Application of Shellac

Shellac, like honey, is the product of an insect—the *lac* bug of India. Its unique qualities are not duplicated in any other known resins or chemical compounds.

Pure shellac was the foundation of the lac-quer of the ancients; it forms the finish on most of the hand-rubbed heirlooms bequeathed us by old-time craftsmen, who applied it in many thin coats and secured a finish almost indestructible; and it still provides the basis for the most beautiful and enduring finishes known today, whether on fine pianos or bowling alleys, where its use is almost universal.

Pure White Shellac is made from the bleached White Shellac Gum, cut in alcohol. The bleached White Shellac Gum is derived from the Orange Shellac Gum imported from India. Pure Orange Shellac in the commercial liquid form is the Orange Flake Shellac Gum cut in alcohol. White Shellac is today generally recommended for floors because of its clear, colorless finish.

To obtain superb results in the use of shellac, the expert craftsman takes certain familiar precautions:

1. Liquid shellac should be used fresh—liquid shellac should preferably not be older than six months. It should be protected from exposure to sunlight or air until used.

2. Shellac should never be exposed to ordinary metals. The cans provided by most manufacturers have a special lead lining. If poured from the can into a metal container, it should be

used promptly. Unused portions should not be left standing in a metal container overnight, but should be returned to the original can. Discoloration or contamination may otherwise result.

3. A good grade of proprietary solvent, commonly known as denatured alcohol (other than anti-freeze) should be used for thinning.

SPECIFYING PURE SHELLAC

The foregoing explains why architects often use the following blanket specification as regards shellac to be used on their work:

“The shellac employed on all floors and woodwork shall be fresh and of the best grade pure white shellac available, and shall be delivered on the job in the original sealed containers of the manufacturer. When poured from the original container on the job, any por-

tion not immediately used is to be returned to the original container. Only a good grade of proprietary solvent, commonly known as denatured alcohol (other than anti-freeze) is to be used for thinning.”

DAMPNESS AND DRYING

Since no wood finish of any nature should be applied on days of excessive humidity, some architects add the following precautionary specification:

“No coating of shellac, paint, lacquer, enamel or varnish shall be applied on days when the humidity is 70 per cent

or more; and care is to be taken that all woodwork and under-coatings shall be dry when any coating is applied.”

Shellac will dry dust-free in ten minutes on an ordinary day, and in an hour can often be lightly walked on without marring. But at least three hours should be allowed between first and second coats, to obtain utmost permanence in finish; and an overnight drying period between second and third coats is recommended, as below.

PRECAUTIONARY TREATMENT

Fine woods are often laid while workmen are still on the job. Since the need for due precautions, including adequate drying time between coats, can often be emphasized to advantage, some architects prefer to specify as follows:

"The contractor shall proceed to do all preliminary work required for the application of the first coat of shellac as here specified, and to apply this coat as soon as each floor specified for such treatment shall have been laid. No one shall walk on this floor within two hours of the shellac application. Thereupon it shall be covered with heavy building paper lapped at least four inches, until such time as all other work in the room is finished and the floor can receive further treatment. In

any event, at least three hours shall be allowed to elapse between the application of the first and second coats; an overnight drying period between the second and third coats, if a third coat is applied. As soon as the floor has been laid, it shall immediately be covered with heavy building paper lapped at least four inches. This cover shall be removed only for the floor's finishing; shall be immediately restored after finishing, and shall remain until all workmen are completely off the job."

THINNING AND MIXING

Three thin coats of shellac are infinitely to be preferred to two thicker coats. Applied thinly, the durability of pure shellac is indefinite; a fine grand piano, for instance, may receive as many as 10 to 12 coats, applied painstakingly by the dip-and-rub method. Bowling alleys are ordinarily finished with six to eight coats. The *Consumers Research Bulletin* (Not Confidential) of June, 1937, stressed the desirability of shellac's being applied in *thin* coats; and stated that, properly applied on an oak floor, "shellac should stay in excellent condition for a minimum of six years." The report added:

"Today seventy per cent of the floors in large cities are being finished with shellac; twenty per cent with sealer; ten per cent with varnish.

"For many homes, on hardwood, oak, or on pine, fir, or spruce soft wood floors, shellac is one of the most serviceable finishes."

Shellac is seldom to be used as it comes from the can. Each particular sort of work requires a particular thinning. These special requirements are stated in the specifications which follow.

The pure shellac most widely sold today comes in a "4-pound cut", meaning four pounds of shellac dissolved in one gallon of alcohol; or a "5-pound cut", meaning five pounds dissolved in the gallon of alcohol.

The following specifications call for reducing these cuts to thinner mixtures. Thus, a 3-pound cut is specified for a priming or wash coat on floors. For all ordinary work, the mixing formula generally followed is the addition of one part of denatured alcohol to two parts of shellac as it comes from the can. However, a detailed table is given below for scientific mixing:

TO CONVERT SHELLAC		USE ALCOHOL
In 5-lb. cut to 3 -lb. cut.....	3½ pints to gallon shellac	
In 5-lb. cut to 2½-lb. cut.....	2⅔ gallon to gallon shellac	
In 5-lb. cut to 2 -lb. cut.....	1 gallon to gallon shellac	
In 5-lb. cut to 1 -lb. cut.....	2⅔ gallon to gallon shellac	
In 4-lb. cut to 3 -lb. cut.....	1 quart to gallon shellac	
In 4-lb. cut to 2½-lb. cut.....	3½ pints to gallon shellac	
In 4-lb. cut to 2 -lb. cut.....	¾ gallon to gallon shellac	
In 4-lb. cut to 1 -lb. cut.....	2⅔ gallons to gallon shellac	

Some Notes on Floor Finishing

Many architects prefer to specify floors finished with pure shellac because this finish, properly applied and cared for, will last for years; is so elastic * that it is not easily marred; does not darken noticeably with age and discolor wood.

Because it dries dust-free within a few minutes of application, it offers a distinct advantage on every job where settling dust and grime often mar floors finished with slow-drying materials. This rapid drying also often makes for real economies in coordinating labor on the job.

If neglect and excess wear do cause worn spots, repatching with shellac is the simplest of operations, accomplished swiftly and without leaving evidence that the floor has been patched. Other finishes, which change color markedly with age, cannot usually be patched so perfectly if need arises.

Pure shellac is the *quick-drying* floor finish that bonds perfectly and *durably* with wood. As a natural resin, originally derived from the trees on which the lac insect deposits it, shellac actually *penetrates* into the pores of the wood and *vitrifies* them, so that the first coat becomes part of the wood itself. Subsequent coats provide a built-up surface to absorb all wear.

As the perfect sealer, shellac performs a double function. Applied in a thin coat to new wood before the workmen are off the job, it prevents soiling and staining of this wood through accident, before the final finish can be applied. Second, it prevents oil, acid and sap stains in this wood from burning through into the final finish, which is applied after other workmen are off the job.

* Coat a piece of zinc with shellac. Bend it, and the elastic shellac will follow the bend. Scratch it with a pin or finger nail—note that a light rubbing with wax will obscure the scratch. Dent a floor, covered with pure shellac, with a hammer. The shellac does not chip, but follows the dent.

NOTES ON FILLERS FOR VARIOUS WOODS

Neither pine, maple, nor birch floors ordinarily require the use of a filler before application of the shellac finish.

It has long been assumed, on the other hand, that oak and other open grains do require a filler for obtaining a deep, smooth lustre in the final finish.

In the practical laboratory tests of finishing methods on oak flooring conducted for the Shellac Information Bureau, results serve to raise a serious question as to the value of such fillers, insofar as the wear of the ultimate finish is concerned. It is true that the filler apparently did add a certain lustre when the finish was new and unworn. On the other hand, *this advantage was soon lost under heavy wear*; the oak flooring treated with filler before application of the final finish failed wholly to compete in wearing qualities with oak flooring coated only with pure white shellac, properly thinned.

The tests demonstrated that shellac is itself the best filler that can be employed. The first thin coat penetrates, hardens, fills the pores, becomes part of the wood itself. Subsequent coats provide a built-up surface as a renewable shield against excess wear. The shellac finish thus performs a dual function. It penetrates, seals, and vitrifies; and then, in subsequent coats, forms a protective, elastic film.

Another important advantage of using shellac as the first coat, without filler, is that it so stiffens the grain and any protruding fibers that a perfect sanding job can follow.

Because of the results shown in the laboratory tests, no fillers are recommended in these specifications as applied to flooring, except on open grain oak floors, where the use

of filler is optional. In finishing wood surfaces not subject to wear, such as trim or built-in furniture, the use of fillers might be also optional. The filler should be absolutely dry before shellac is applied—overnight drying is usually required.

Traditional methods of filling oak and other open grains may be summarized as follows:

No. 2 Paste Filler is thinned with naphtha, wiped on across the grain with excelsior, then wiped off, with the grain, with burlap. Drying time of at least

twelve hours is then to be allowed. After application, a coat of shellac should be applied before sanding, to prevent cutting through the filler.

STAINS

Water stains are recommended for all fine woods where coloring is desired, since they can be applied without streaking or lapping. The drying time required is usually much less than for oil stains. It is very important, however, that the stain be completely dry before the shellac is applied.

PREPARATION

On the finest work, better results are often obtained if the preparation is not left entirely in the hands of carpenters, and if allowance is made in the painter's contract for preparing the floor and sanding with No. $\frac{1}{2}$ sandpaper, after which the floor should be thoroughly cleaned.

WAXING

All *waxed* floors should be sealed with shellac before application of the wax to prevent dirt grinding through the wax into the wood. From time to time the soiled wax coating can be removed, as readily as old polish is removed from shoes, by sponging with turpentine. Rewaxed, the floor will regain its new appearance.

When a wax finish is desired, the floor should first receive at least one thin coat of shellac, and preferably two. Where a wax polish is excessively slippery, the cause usually lies in too thick a coating of wax; it should be put on extremely thin. If a high gloss is not desired, a very dull sheen may be obtained by going over the final polish with a damp cloth.

Tests show that pure white shellac, properly applied, will endure and wear better than most other finishes in the entire absence of the wax application.

Specifications for Floor Finishing

WIDE PINE BOARDS AND SPECIAL WORK

On special work, including wide pine boards, some architects desire to obtain an extremely uniform staining. If this is the objective, a very thin coat of shellac should be applied *before* staining, to give the wood a uniform porosity. The specifications for the contract would then read as follows:

"The floor is to be sanded with No. 1/2 sandpaper until smooth, thoroughly cleaned until dust free, and then given a coating of pure white shellac, as hereafter specified, this shellac to be thinned to a 1-pound cut with approved proprietary solvent. Water stain is then to be applied to match

furnished sample. Second and third coats are then to be applied, thinned to easy brushing consistency (i.e., approximately a 3-pound cut). After each under-coat, the floor is to be sanded by hand with No. 00 sandpaper and thoroughly cleaned."

PINE AND OTHER CLOSE GRAINS — ORDINARY

Where a less permanent finish is required, the prime coat of shellac may be omitted. A water stain may be specified, if coloring is desired. The specification would then read:

"The floor is to be sanded with No. 1/2 sandpaper until smooth, thoroughly cleaned until dust free, [and stained with water stain to match the sample furnished, giving ample time thereafter to dry.] Two coats of pure white shellac are then to be applied, thinned

to easy brushing consistency (i.e., approximately a 3-pound cut). The thinning is to be done with approved proprietary solvent. Following the under-coat, the floor is to be sanded with 00 sandpaper, and thoroughly cleaned."

OAK AND OTHER OPEN WOODS

Ordinarily, no filler is to be recommended. See notes on fillers for possible special treatments. If the floor is not stained, the specifications would read:

"The floor is to be sanded with No. 1/2 sandpaper until smooth, and thoroughly cleaned until dust free. Pure white shellac, as hereafter specified, shall then be applied. For the first coat, the shellac shall be thinned to a 3-pound cut with approved proprietary solvent. Second and third coats

are then to be applied, thinned to easy brushing consistency (i.e., approximately a 3-pound cut). (*Note: Third coat may be omitted if economy is first consideration.*) After each under-coat, the floor is to be sanded by hand with No. 00 sandpaper and thoroughly cleaned."

If staining is to be used, the specification would include:

"After sanding, but before application of the first coat of shellac, the floor is to be uniformly stained with a water

stain to match the furnished sample, and allowed to dry thoroughly before the first shellac application."

MAPLE AND BIRCH

These close grained woods are ordinarily not stained, and require no filler. The specifications, with these possible omissions, are then the same as for pine and other close grains.

WATER RESISTANCE

Tests in the laboratory show surfaces finished with pure shellac to be more highly water-resistant than most of the sealers and varnishes, whatever the claims for these other products. Any user can make this test for himself: take several pieces of wood, each coated with a different finish, and pour on each a small "puddle" of water from a teaspoon. Allow the water to remain for an hour. It will be found that the shellac has discolored less than most of the other finishes; and this discoloration can be removed immediately by rubbing lightly with wax, or with an alcohol-dampened rag. Some of the other finishes, on the other hand, will be so damaged that even the wood beneath the water spot has been affected, with a discoloration that cannot be removed without removing the entire finish and resurfacing.

This does not mean that the ordinary commercial cuts of shellac are recommended for either exterior work, or jobs where dampness is a steady problem. For water-resisting shellac mixtures, a special mixing is recommended. If information on such mixing is desired, inquiries should be addressed to the Shellac Information Bureau, 70 Pine Street, New York.

HIGH GLOSS EFFECTS

In work where an exceedingly high gloss is required, six to eight coats of pure white shellac in a 2-pound cut should be specified, instead of the usual three, each coat to be hand-rubbed with 00 sandpaper before application of the next coat. The final coat is not to be sanded. This applies particularly to Bowling Alleys and dance floors.

RECONDITIONING WORK

The refinishing of old floors that have been neglected is often a greater problem to owners and floor finishers alike than any other one piece of work on a property.

Where the original finish was shellac, the problem of refinishing is greatly simplified. The damaged finish can be removed with a sanding machine at less cost than almost any other sort of finish. The reason is that the shellac gum does not clog the sanding paper. The evaporation of the original alcohol solvent left nothing on the floor but the pure resilient gum; and this is bonded so uniformly with the wood that it comes off not in flakes and chunks, but in uniformly fine particles.

If some other sealer and surfacing was used, the removal by sanding machine will usually be a more prolonged and costly piece of work.

In any event, the architect will want to take the precaution of having the old finish, including grease and wax remnants, completely removed. The following specification would be applicable:

"The old finish shall be removed by sanding machine, and great care shall be taken in subsequent wiping to as-

sure that no traces whatever of old wax or grease shall remain on the surface or in the grain."

Thereafter the treatment is the same as for new floors.

In refinishing work on large surfaces that have been well maintained, such as a bowling alley or a dance hall, sanding is usually not required. But great care should be taken that the old wax is removed. One efficient and safe method may be specified as follows:

"The floor shall be rendered free of all traces of wax and grease by cleaning with any of the approved cleaning compounds, to which is to be added a liberal amount of pumice stone, using a revolving electric brush. The floor is

then to be washed thoroughly with clear water, so that all traces of alkali, soap powder, and cleaning compound are completely removed. A final sponging with denatured alcohol (not anti-freeze) is to follow."

Thereafter the floor is ready for a new shellac coating.

Specifications for Finishing Interior Woodwork

SHELLAC AS A PRIMING COAT

The use of white shellac as a priming coat under all paint and enamel finishes is required by many architects; the experience of craftsmen has established the following advantages of such a treatment:

(1) "Soft" spots in the wood are sealed so that excessively flat patches do not show up to mar the finish coats. (2) Knots and other defects are sealed in, thus preventing stains from burning through to the final coat. (3) Pure shellac forms a perfect bond both with wood and paint overcoats. (4) Shellac as the priming coat serves to seal the wood so effectively that later moisture absorption, resulting in warping, is greatly minimized. (5) The first shellac coat so stiffens the grain and any protruding fibers that a perfect sanding job can follow, so that an absolutely smooth finish in the other coats can be obtained. (6) Shellac makes for speed and economy in the application of the paint overcoats, and craftsmen who once use it are seldom willing to revert to any other priming method. But shellac should not be used over old paint prior to repainting.

Shellac not only makes the perfect primer and base for the conventional paints and enamels, but also gives superb performance under most of the new synthetic lacquers. Its economy, compared to synthetic primers, is marked, as many furniture manufacturers have demonstrated on a large scale.

Where shellac is to be employed for such purposes, the specifications may be as follows:

"All painted trim and woodwork shall first receive a priming coat of pure white shellac, of a quality as herein-after specified, the standard cut to be thinned to a 2-pound cut with an approved proprietary solvent. Before ap-

plication of the shellac, the wood is to be sanded with No. 1/2 sandpaper; after the shellac dries, a sanding with No. 00 sandpaper is to follow, until an absolutely smooth surface is secured."

NATURAL WOOD FINISHES

Shellac, applied in thin coats, is the foundation of most fine natural wood finishes—whether on grand pianos and other examples of the cabinet maker's art, or on interior trim and wood panelling.

The number of coats employed, and the method of application and rubbing, may vary with the nature of the finish desired and in general with the degree of perfection that is sought.

Architects are invited to consult with the Shellac Information Bureau on wood-finishing methods used by fine cabinet makers to obtain results that will compare favorably with the finest examples of wood-working art we have inherited from the past.

For ordinary commercial work, where natural wood finishes are desired, the specifications call for two coats of shellac applied in a 2½-pound cut, and followed either by two coats of paste wax, hand rubbed or (on cheaper work) by a "hand-rubbed effect varnish," which is a flat varnish simulating a wax finish.

The treatment of the woods, as to staining and filling, is exactly the same as the treatment for wood floors previously described; and specifications to sanding, the application of shellac, and its proper cut, are also identical. (See page 7.)

SHELLAC AS A VARNISH BASE

Shellac, properly applied, does not usually require a varnish finish on interior work, and many craftsmen question whether any additional benefits are thereby obtained.

Roger Whitman, nationally famous for his unique newspaper column of disinterested advice to householders, recently published the following reply to an inquiry on this subject:

"The durability of a high quality of pure shellac, when properly thinned and applied in three thin coats, will

be as good as that of varnish. However, if you have had good results with floor varnish, continue to use it."

Some people do want varnish for the final finish. Where this is demanded, shellac will make an economical base for the varnish finish on all trim and furniture, and is widely used for this purpose, because of its great economy and ease of application. It grips the wood with a bond no varnish excels. As a sealer, it excels. Finally, it makes a good bond with the final varnish coat. It bonds equally well with the conventional varnishes and with most of the varnishes with a synthetic resin base. Where special preparations are ordinarily employed as an undercoating for the resin varnishes, pure white shellac may be usually substituted with a marked gain in economy and speed, and no loss in performance. Many furniture manufacturers, working in a highly competitive field where economy is important, know this.

Where a final varnish coat is to be specified, the specifications for the wood treatment are exactly the same as for woods when used in floors, (See Page 7) except that the varnish specification desired is added.

For Priming (Sizing) Walls

Shellac saves head-aches on walls. Shellac as a sealer or size for walls works so effectively that architects specify it almost universally as the priming coat for plaster walls that are to be painted; and also to stop suction on walls where paper is to be applied. On new walls which must be decorated before the plaster is fully "cured", shellac as a sealer has no substitute. On old walls, where new plaster patches and numerous defects must be sealed in to obtain a uniform finish, shellac is the preferred primer.

The specification would read:

"All walls, whether to be painted or to be papered, shall be first primed with

a coating of pure white shellac in a 3-pound cut."

Proper sizing of walls with shellac will save 15-20% of the paint otherwise required.

Shellac makes a particularly valuable primer for the various composition wall-boards. Not only, by reducing suction, does it make for extensive paint economy; it also tends to reduce the moisture absorption that causes buckling and warping. Coating on both sides of wall board, prior to installation, is recommended for purposes of best protection against moisture absorption.

24,000 TRAMPING FEET, IN FLOOR TESTS BY INDUSTRIAL ENGINEERS, REVEAL

**SHELLAC
WEARS
BETTER**

THAN ANY OTHER FLOOR FINISH

NOTICE THE DIFFERENCE IN COLOR, IN



1 Finished with a

2 Finished with w

3 Finished with w

4 Finished with w

In dramatic, grueling floor tests, 2000 students daily stamp, scrape, shuffle over corridors laid with panels of identical wood, finished many different ways—with shellac, with well known resin sealers, well known wax sealers, leading varnishes. Afterward, comparison of panels shows how shellac retains its original color far more faithfully; scratches less; discolors less; *outwears all other types*; keeps its good looks better than any other finish.

Every kind of floor finish makes big claims. But what are the facts? Which will really stand up best?

We wanted to know, just as *you* want to know. So we (The Shellac Information Bureau) went to an independent engineering laboratory, Barsky & Strauss, 202 East 44th Street, N. Y. C.—scientists trained to devise tests that give the third degree to all kinds of products.

“We want you to find out how a good grade of pure white shellac will wear on floors, compared with other floor finishes,” we said. “*Buy the materials in the open market*. Buy the best varnishes, the best known sealers, both wax and resin. Buy any good grade of pure white shellac. Then devise a way to test all these floor finishes

together—under conditions of actual use.”

How the Plan Was Laid Out

“The two tests of a floor finish are beauty and wear,” said these experts. “Everybody knows shellac is a beautiful finish. We’ll test it against other finishes for wear.”

“How? By laying sample finishes down on a floor where they’ll all get equal wear in traffic.

“Where? At the Brooklyn Polytechnic Institute, where you can lay sample floors in the corridors and have an army of students march over them day and night.”

So They Went to Brooklyn Polytechnic Institute

Here an average of 2000 young men per day tramp through the corridors going to day and night classes; scrape floors with thoughtless feet and rough boots; drench the floors with water carried in on rubbers when it rains; grind into the floors grit and muck that they track in from wintry streets.

Here in a passage-way, where hundreds of pairs of restless young feet shuffle all day long, a whole series of wood floor panels was installed. *Sixty-four panels in all.*

SCRATCHES, IN GOOD LOOKS, IN WEAR

good grade of shellac

well-known resin sealer

well-known varnish

well-known wax finish



The finishes were applied to three kinds of wood—rift-sawed No. 1 Oak, White Pine, and Maple No. 1.

All Finishes Were Bought in the Open Market

There were tested, in all, five widely advertised and distributed resin sealers; two so-called penetrating wax finishes; five varnishes. And of course a good grade of pure white shellac. These were all bought in the open market, at gallon prices ranging from \$2.75 for one of the waxes to \$4.10 for one of the varnishes. The shellac was bought in a 5-pound cut, at \$2.10. The finishes were all applied strictly in accord with the manufacturers' instructions by Barsky & Strauss' laboratory men. Shellac, as the instructions directed, was the only finish diluted, and not used as it poured from the can. A good, proprietary solvent grade of alcohol, especially made for thinning shellac, bought at 60 cents a gallon, was used for thinning, at the ratio of 3 pints of shellac to 2 pints of alcohol.

Difference No. 1—Drying

The shellac was applied to its sample squares in a few

hours. All three shellac coats were applied the same day.

But the other finishes certainly took time to dry! All of them, with one exception, needed overnight drying between coats. And most of them had to have an additional day before going into service.

A Test Equal to Six Months' Wear in the Home

Then the wear began! Day in and day out—night time classes, too—the grind went on. An accelerated time test. Dozens of days of average floor wear were compressed into each day of the week. All in all, the equivalent of more than six months floor wear in an average home.

No care whatever was given these sample finishes, except the daily cleaning with a damp mop that the charwomen of the Institute give regularly to all the polished floors of the building.

Then the time came to take the panels up and cart them to the laboratory for comparative examination. One look was all anybody needed.

The scientists didn't need a microscope. No Sherlock Holmes had to be brought along to find the footprints



1 Finished with shellac

2 Finished with well-known resin sealer

3 Finished with well-known varnish

4 Finished with well-known wax finish

on most of these panels.

A glance showed that the panels finished with pure white shellac came through the test far better than those of any other finish!

The Pictures Speak for Themselves

We told the photographer: "Take good clear pictures of those panels and don't retouch them. We want to record these results just as you see them now."

So the only cleaning which the panels received before taking the pictures was a dusting with a dry rag. The wood was photographed just as it was.

Notice how perfectly the shellac-finished panels retained their original color. Notice how the other panels became decidedly darker. Originally, before applying any finish, all the panels were exactly the same color. Notice too how much less the shellac panels were scratched.

Photographs Worth Remembering

Take a good look at these comparative pictures. Here is revealing, dependable, helpful information—never before available. These photographs tell you *without ballyhoo*

that shellac is the time tested finish you can depend on for results. Good craftsmen have been saying this for many years. Science now says they are *right!*

That's why it will pay you to use a good grade of pure white shellac on your next job. Because now you can be surer than ever that a shellac floor will show up better-looking, and wear longer, than any other kind! You know your client will be pleased, not just when you finish the job—but years afterward!

NOTE: The identical panels photographed (above) and others too, will be on exhibition at the Architects' Building, 103 Park Avenue, New York City, under auspices of the Shellac Information Bureau.

AFFIDAVIT: The undersigned, F. A. Strauss, V.-P. of Barsky & Strauss, Inc., consulting engineers, being duly sworn, does hereby state that the tests described in these pages were conducted in a completely impartial manner on finishes bought in the open market, and applied according to manufacturers' directions; that all finishes were exposed to identical conditions of wear; and that shellac was not given the slightest advantage either in the making of the tests or the photographs. Signed *F. A. Strauss* Sworn to and subscribed before me this Twenty-seventh day of May, 1940.

Robert A. Pen, Notary Public

SHELLAC INFORMATION BUREAU

OF THE AMERICAN BLEACHED SHELLAC MANUFACTURERS ASSN., INC.

70 PINE STREET • NEW YORK CITY

Condensed Summary of Specifications For Shellac Application

BLANKET SPECIFICATION

"The shellac employed on all floors and woodwork shall be fresh and of the best grade pure white shellac available, and shall be delivered on the job in the original sealed containers of the manufacturer. When poured from the original container on the job, any portion not immediately used is to be returned to the original container. Only a good grade of proprietary solvent, commonly known as denatured alcohol (other than anti-freeze) is to be used for thinning."

DAMPNESS AND DRYING

"No coating of shellac, paint, lacquer, enamel or varnish shall be applied on days when the humidity is 70 per cent or more; and care is to be taken that all woodwork and under-coatings shall be dry when any coating is applied."

SHELLAC AS A PRIMING COAT

"All painted trim and woodwork shall first receive a priming coat of pure white shellac, of a quality as hereinafter specified, the standard cut to be thinned to a 2-pound cut with an approved proprietary solvent. Before application of the shellac, the wood is to be sanded with No. 1/2 sandpaper; after the shellac dries, a sanding with No. 00 sandpaper is to follow, until an absolutely smooth surface is secured."

"All walls, whether to be painted or to be papered, shall be first primed with a coating of pure white shellac in a 3-pound cut."

FLOOR TREATMENT — PRECAUTIONARY

"The contractor shall proceed to do all preliminary work required for the application of the first coat of shellac as here specified, and to apply this coat as soon as each floor specified for such treatment shall have been laid. No one shall walk on this floor within two hours of the shellac application. Thereupon it shall be covered with heavy building paper lapped at least four inches, until such time as all other work in the room is finished and the floor can receive further treatment. In any event, at least three hours shall be allowed to elapse between the application of the first and second coats; an overnight drying period between the second and third coats, if a third coat is applied. As soon as the floor has been laid, it shall immediately be covered with heavy building paper lapped at least four inches. This cover shall be removed only for the floor's finishing; shall be immediately restored after finishing, and shall remain until all workmen are completely off the job."

WIDE PINE BOARDS AND SPECIAL WORK

"The floor is to be sanded with No. 1/2 sandpaper until smooth, thoroughly cleaned until dust free, and then given a coating of pure white shellac, as hereafter specified, this shellac to be thinned to a 1-pound cut with approved proprietary solvent. Water stain is then to be applied to match furnished sample. Second and third coats are then to be applied, thinned to easy brushing consistency (i.e., approximately a 3-pound cut). After each under-coat, the floor is to be sanded by hand with No. 00 sandpaper and thoroughly cleaned."

PINE AND OTHER CLOSE GRAINS — ORDINARY

"The floor is to be sanded with No. 1/2 sandpaper until smooth, thoroughly cleaned until dust free, [and stained with water stain to match the sample furnished, giving ample time thereafter to dry.] Two coats of pure white shellac are then to be applied, thinned to easy brushing consistency (i.e., approximately a 3-pound cut). The thinning is to be done with approved proprietary solvent. After the under-coat, the floor is to be sanded with 00 sandpaper, and thoroughly cleaned."

OAK AND OTHER OPEN WOODS

"The floor is to be sanded with No. 1/2 sandpaper until smooth, and thoroughly cleaned until dust free. Pure white shellac, as hereafter specified, shall then be applied. For the first coat, the shellac shall be thinned to a 3-pound cut with approved proprietary solvent. Second and third coats are then to be applied, thinned to easy brushing consistency (i.e., approximately a 3-pound cut). (*Note: Third coat may be omitted if economy is first consideration.*) After each under-coat, the floor is to be sanded by hand with No. 00 sandpaper and thoroughly cleaned."

STAINING

"After sanding, but before application of the first coat of shellac, the floor is to be uniformly stained with a water stain to match the furnished sample, and allowed to dry thoroughly before the first shellac application."

RECONDITIONING WORK

"The old finish shall be removed by sanding machine, and great care shall be taken in subsequent wiping to assure that no traces whatever of old wax or grease shall remain on the surface or in the grain."

WOOD TRIMS AND PANELLING

The treatment of the woods is exactly the same as the treatment for wood floors, except that the shellac is used in a 2 1/2 pound cut. (See Page 9.)

A useful handbook for contractors, painters, decorators, and floor finishers is published by the Shellac Information Bureau under the title: "How to Use Shellac for Best Results." Copies will be supplied without cost to architects for their own reference use, and for putting in the hands of contractors and subcontractors in order to obtain the best results on the job.

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